| Roll No. |  |  |  |  | Total No. of Pages: 0 | 2 |
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Total No. of Questions: 09

B.Tech.(Automation & Robotics) (2012 & Onward) (Sem.-5)

# HYDRAULIC AND PNEUMATICS

Subject Code: BTAR-501 M.Code: 70475

Time: 3 Hrs. Max. Marks: 60

#### **INSTRUCTION TO CANDIDATES:**

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- 3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

### **SECTION-A**

## 1. Answer briefly:

- a) Differentiate between laminar and turbulent fluid flow.
- b) What do you meant by non-positive displacement pump?
- c) Define Reynolds number.
- d) What is biodegradable oil?
- e) Give the graphical symbol for pressure reducing valve.
- f) List out the basic types of filtering methods used in hydraulic systems.
- g) What is a hydraulic accumulator?
- h) What do you mean by cushioning of Fluid power actuators?
- i) What is the function of a lubricator?
- i) List out the most widely used types of seal configurations.



### **SECTION-B**

- 2. What are the advantages of oil hydraulic systems over other methods?
- 3. What are the desirable properties of hydraulic fluids? Discuss any eight of them in detail.
- 4. Draw fluid power symbols of any six different types of valves.
- 5. Explain the working of gear oil pump with neat sketch.
- 6. Mention different types of pumps used in fluid power system.

### **SECTION-C**

- 7. What are the factors to be selected in selection of a pump for automobiles lift? How will you measure the pump performance? Explain each with suitable Examples.
- 8. With the help of circuits, explain how synchronizing of two linear actuators are achieved by connecting them in series?
- 9. With neat sketch describe the construction and operation of pressure regulated low control valve. Explain the working of four way two position direction control valve.

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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